Thomas Breimer

(518) 360-9710 | tbreimer@brandeis.edu | breimer.org | LinkedIn | GitHub

EDUCATION

Brandeis University | Waltham, MA **May 2030**

First Year PhD Student in Data Visualization Systems at Brandeis University's BraVA Lab | GPA: 4.0/4.0

- **Advisors*:*** Dr. Dylan Cashman & Dr. Liuba Shrira
- **Courses:** Data Visualization, Computer Systems, Machine Learning, Human Computer Interaction, Database Management Systems
- **Research Interests:** Data Visualization, Systems, Human-Computer Interaction

Union College | Schenectady, NY **Jun. 2025**

B.S. in Computer Science, Minors in Mathematics and Music Technology | GPA: 3.9/4.0

- **Courses:** Computer Organization, Data Structures, Algorithms, Large Scale Software Design, Evolutionary Algorithms, Programming Languages, Linear Algebra, Number Theory, Formal Methods, etc.

HONORS & SOCIETIES

B.S. In Computer Science, *Summa Cum Laude,* Union College. **Jun. 2025**

Dean's List, Union College. **'22, '23, '24, '25**

Sigma Xi. **May 2025**

Liberty League All-Academic Team, Cross Country and Track & Field, Union College. **'23, '24, '25**

CSC Academic All-District First Team, Track & Field, Union College. **Jun. 2024**

Theta Delta Chi. **Nov. 2022**

TECHNICAL SKILLS

Languages: Python (Pandas, Matplotlib, Keras, TensorFlow), MATLAB, Java, JavaScript, Scheme

Tools and Frameworks: Node.js, D3.js, React.js, AngularJS, Docker, WireShark, Plotly, Git, Qt, Tableau, Maven, LaTeX, Data Cleanup, Transformation, Augmentation

RESEARCH EXPERIENCE

Union College Evolutionary Robotics Lab | Schenectady, NY **Jun. 2025 - Aug. 2025**

Research Intern

- Developed a framework for the generation of 3D tetrahedral meshes in Python using grammar-like production rules which are derived using an evolutionary algorithm.
- Part of a NSF grant for the iterative design and generation of soft robots using evolutionary algorithms and 3D printing.

Air Force Research Lab | Rome, NY **Jun. 2024 - Aug. 2024**

Research Intern

- Developed an integrated system for the real-time identification & tracking of objects in a combat environment.
- My system married Topological Data Analysis (TDA) with deep learning strategies in TensorFlow to track non-persistent targets in full motion video and presented insights via a hand-crafted Qt application.
- Work published in SPIE Defense + Commercial Sensing 2025 (poster session section).

Boise State University Cloud Computing Security & Privacy REU | Boise, ID **Jun. 2023 - Aug. 2023**

Research Intern

- Researched ways to improve privacy tools in augmented reality and developed a system to automatically track facial expressions and interface with Chat-GPT-4o to provide real-time privacy feedback.

CONFERENCES & POSTER PRESENTATIONS

NextGen: Data Science Day **Nov. 2025**

Schrader P., Love H., **Breimer T**. (2025, November 8) *A Topological Data Analysis-Based Feature Engineering for Automatic Target Recognition User Interface (tda2tru)* [Poster Presentation]. NextGen: Data Science Day, Boston, Massachusetts.

Union College Steinmetz Day **May 2025**

Meek M.**, Breimer T**. (2025, May 9) *Exploring Morphological Communication in Soft Robots Controlled by Spiking Neural Networks* [Poster Presentation]. Union College Steinmetz Day, Schenectady, New York.

IEEE RoboSoft **Apr. 2025**

Rieffel J., **Breimer T**. (2025, April 22). *Soft Robotics Simulator Tutorial and Hackathon* [Conference Session]. IEEE RoboSoft, Lausanne, Switzerland.

SPIE Defense + Commercial Sensing **Apr. 2025**

Schrader P., Love H., **Breimer T**. (2025, April 15) *A Topological Data Analysis-Based Feature Engineering for Automatic Target Recognition User Interface (tda2tru)* [Poster Presentation]. SPIE Defense + Commercial Sensing, Orlando, Florida.

Idaho Conference on Undergraduate Research **Jul. 2023**

Breimer T. (2023, July 19) *Social Norm Cues Classification in Augmented Reality* [Poster Presentation]. Idaho Conference on Undergraduate Research, Boise, Idaho.

LEADERSHIP EXPERIENCE & ACTIVITIES

Teaching Assistant | Brandeis University **Sep. 2025 - Present**

- I mentor 70 students in *Intro to Python*, write automatic grading scripts, hold weekly office hours, and hold twice weekly recitations where I lead students through programming problems via lecturing & workshops.

Varsity Cross Country and Track & Field Team Member, Captain, and SAAC Rep **Aug. 2021 - May 2025**

- I was a four year member of Union's varsity Cross Country and Track & Field teams; I was team captain and our team's representative in SAAC (Student-Athlete Advisory Committee) during my senior year.
- Met with coaches to discuss team strategy, managed conflicts between teammates, led team pre-race/practice warmups, brought team's concerns to the SAAC board.

Early Music Ensemble | Violist **Sep. 2022 - May 2025**

- Violist in Union College's Early Music Ensemble.
- Performed baroque pieces in concerts in a small ensemble thrice a year.